

## REMARKS

Initially, Applicants thank Examiner Riley for the indication of allowability of Claims 1-15.

### I. Claim Status.

Claims 1-23 are pending in the application. Claims 16 and 17 are withdrawn from consideration. Although no changes to the claims are made with this Response, Claims 1-23 are listed above for the Examiners convenience.

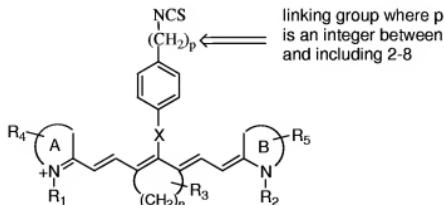
### II. The Rejection Under 35 USC §102(b).

The Office has rejected Claims 18-23 under 35 USC §102(b) as being anticipated by Patoney US 5571338 for the reasons stated on page 2 of the Office Action dated December 21, 2006. Applicants respectfully traverse this rejection and request consideration of the following comments.

#### A. Patoney et al. Does Not Disclose Applicants Claimed Compounds.

Claims 18-23 each claim a compound having a linking group, -X-phenyl-(CH<sub>2</sub>)<sub>p</sub>-NCS, attached to the cyanine portion of the compound. Patoney et al. do not disclose compounds having this linking group.

The Markush group of Claim 18 is shown below. This structure, and corresponding definitions, claim the linking group, -X-phenyl-(CH<sub>2</sub>)<sub>p</sub>-NCS, where p is an integer between and including 2-8. Compounds having this claimed linking group are not disclosed in Patoney et al.



Each of Claims 18-23 claim the linking group -X-phenyl-(CH<sub>2</sub>)<sub>r</sub>-NCS, which is not disclosed in Patoney et al. Accordingly Applicants request withdrawal of the rejection under 35 USC §102(b) and allowance of Claims 18-23.

### **B. Applicants Claimed Compounds Are Non-Obvious Over Patoney et al.**

The Office has not rejected Claims 18-23 as obvious over Patoney et al. However, for the sake of completeness, Applicants submit that Claims 18-23 are non-obvious over Patoney et al.

#### **1. Patoney et al. Does Not Disclose Applicants Claimed Compound Genus.**

As noted in par II(A) above, Patoney et al. does not disclose the -X-phenyl-(CH<sub>2</sub>)<sub>r</sub>-NCS group anywhere in the reference. Accordingly, Patoney et al. does not disclose Applicants claimed genus and Patoney et al. does not support a *prima facie* case of obviousness.

#### **2. Patoney et al. Does Not Provide Motivation To Select Applicants Claimed Compound Genus.**

Applicants do not concede that Patoney et al supports a *prima facie* of obviousness. However, inasmuch as such an argument for *prima facie* obviousness may exist, Patoney et al. does not provide motivation to select Applicants claimed compound genus. It is well established case law that to establish a *prima facie* case of obviousness in a genus-species chemical composition situation, the prior art must suggest the desirability of the modification or replacement. MPEP § 2144.08. As stated in *Sanofi v. Apotex, Inc.*, 470 F.3d 1368, 1379, “ . . . it is insufficient to merely identify each element in the prior art to establish unpatentability of the combined subject matter as a whole.”

##### **a) Patoney et al. Discloses A Large And Diffuse Array Of Compounds That Does Not Inherently Disclose Applicants Claimed Compound Genus.**

Patoney et al. discloses a huge variety of cyanine compounds, in multiple compound formulas, i.e., Formulas 1-17. These compounds are neutral (i.e., do not contain a polarizing ligand such as SO<sub>3</sub><sup>-</sup>), or polar, and have a startling array of

alternating positions and varying ligands. The array of compounds disclosed in Patoney et al. is so vast and diffuse that Applicants claimed compound genus is not inherently disclosed.

Applicants claim a genus of cyanine compounds characterized by three prominent features. Referring to the Markush group of Claim 18, also shown in paragraph II(A) above, each of Applicants claimed cyanine compounds have:

- i) a linking -X-phenyl-(CH<sub>2</sub>)<sub>r</sub>-NCS group attached to the cyanine chain; and
- ii) at least one sulfonyl group attached to the cyanine ring (i.e., R<sub>4</sub> and R<sub>5</sub>, where R<sub>4</sub> and R<sub>5</sub>, are H or SO<sub>3</sub><sup>-</sup>, and at least one of R<sub>4</sub> and R<sub>5</sub> is SO<sub>3</sub><sup>-</sup>); and
- iii) an alkyl group attached to the imminium (or indolyl) Nitrogen (N).

These features Applicants of claimed cyanine compounds form a relatively small and well defined compound genus. This claimed compound genus is not inherently or directly disclosed by Patoney et al.

Further, the majority of compounds disclosed in Patoney et al. are not structurally similar enough to Applicant's claimed compound genus to suggest the genus. Formula 10, Table 3, col. 13 of Patoney et al. discloses a compound having a sulfonyl group attached to the cyanine ring and an alkyl group attached to the imminium group. However, this compound, nor any other compound in Patoney et al., does not have a -phenyl-(CH<sub>2</sub>)<sub>r</sub>-NCS group. The -NCS group which is disclosed in Patoney et al., is directly attached to a phenyl group (i.e., a -phenyl-NCS group). There is no teaching or suggestion of Applicant's -phenyl-(CH<sub>2</sub>)<sub>r</sub>-NCS group. Accordingly, Patoney et al. does not provide motivation to select applicants claimed compound genus.

**b) Patoney et al. Does Not Otherwise Teach Applicants Claimed Compound Genus.**

The above described features i) – iii) of Applicants claimed compound genus are important to the utility of the compound. Applicants claimed compounds are used as intermediates in forming the fluorescent reporter labeled compounds described in the specification. The compounds encompassed by Applicants claimed genus have been

carefully selected as they satisfy a need for a fluorescently labeled chain terminator that does not interfere with nucleotide replication. Applicants claimed compounds have also been found to be stable and have a fluorescent detection wavelength that is amenable to automated systems. *See*, Specification page 6, line 23 through page 7, line 5; Examples 12 and 13, pages 24 through 25.

As described in the Specification, Applicants found their claimed genus of compounds through extensive experimentation. Patoney et al. does not contain express teachings that would motivate the selection of Applicants claimed compounds as required by USPTO practice and procedure. Accordingly, the Claims 1-18 are non-obvious over Patoney et al.

### **3. Summary.**

As described above, Claims 18-23 contain a well defined and carefully selected compound genus that is not taught or disclosed in Patoney et al. Further, Patoney et al. does not provide motivation to select Applicants claimed compounds. Accordingly, Applicants request allowance of Claims 18-23.

### **CONCLUSION**

If there are any issues that can be resolved by telephone with the Applicants' representative, the Examiner is encouraged to contact the undersigned directly.

No fees are believed due with this Response. However, if any fees are due, the Commissioner is authorized to charge any such fees to deposit account No. 19-2090.

Respectfully Submitted,  
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